

RESEARCH MONOGRAPH . COMPOUND PROFILE

Follistatin 344

An isoform of the endogenous myostatin antagonist follistatin, sold as a research peptide for muscle hypertrophy applications.

DOCUMENT	KDC-MN-089
ISSUED	2026-05-09
REVISION	1.0
AUTHOR	Kodiac bioLabs Research
COMPOUND CLASS	Myostatin antagonist / follistatin isoform

RESEARCH USE ONLY

ABSTRACT

Follistatin 344 is an isoform of the endogenous protein follistatin (the 344-residue form, encoded as one splice variant of the FST gene). Follistatin binds and antagonizes myostatin (GDF-8), a TGF-beta family member that negatively regulates skeletal muscle mass. Antagonizing myostatin produces increased muscle hypertrophy and reduced muscle atrophy in animal models. Follistatin 344 is sold as a research peptide for muscle development applications. The compound is administered subcutaneously or intramuscularly; oral bioavailability is poor. There is no human clinical trial record for follistatin 344 specifically; the related ACE-031 (a soluble activin receptor type IIB Fc fusion) was developed pharmaceutically and reached Phase 2. Investigational doses range widely with poorly characterized safety; chronic myostatin antagonism may have cardiac and tendon implications that are not adequately studied.

1. Compound Identification

Follistatin 344 is described as myostatin antagonist / follistatin isoform. An isoform of the endogenous myostatin antagonist follistatin, sold as a research peptide for muscle hypertrophy applications.

1.1 Class summary

Myostatin antagonist / follistatin isoform

1.2 Subtitle

An isoform of the endogenous myostatin antagonist follistatin, sold as a research peptide for muscle hypertrophy applications.

2. Abstract

Follistatin 344 is an isoform of the endogenous protein follistatin (the 344-residue form, encoded as one splice variant of the FST gene). Follistatin binds and antagonizes myostatin (GDF-8), a TGF-beta family member that negatively regulates skeletal muscle mass. Antagonizing myostatin produces increased muscle hypertrophy and reduced muscle atrophy in animal models. Follistatin 344 is sold as a research peptide for muscle development applications. The compound is administered subcutaneously or intramuscularly; oral bioavailability is poor. There is no human clinical trial record for follistatin 344 specifically; the related ACE-031 (a soluble activin receptor type IIB Fc fusion) was developed pharmaceutically and reached Phase 2. Investigational doses range widely with poorly characterized safety; chronic myostatin antagonism may have cardiac and tendon implications that are not adequately studied.

3. Mechanism of Action

Endogenous myostatin (GDF-8) antagonist; binds and neutralizes myostatin to increase muscle hypertrophy.

The mechanistic profile described above represents the consensus position from peer-reviewed literature where available; for compounds with sparse formal characterization, this section reflects vendor-grade reports and structurally-related class pharmacology and should be interpreted with appropriate caution.

4. Pharmacokinetics and Routes of Administration

Pharmacokinetic data are summarized within the abstract for compounds with formal Phase 1 records. Compounds without published human pharmacokinetic studies are noted as such; investigators should treat the absence of data as a research limitation.

5. Reported Research Dose Ranges

100 micrograms to 1 mg per day SC/IM (research-grade); safety poorly characterized.

Doses are scaled from clinical use where the compound is approved as a medicine, from Phase 2/3 trials where development advanced, or from rodent dose-response data scaled by allometric assumptions where the compound has no human clinical record. Investigators should treat dose ranges from research-chemical-grade vendors as starting points for their own pharmacokinetic and tolerability characterization rather than validated dosing recommendations.

6. Sourcing and Quality Verification

Investigators should obtain analytical confirmation of identity (mass spectrometry; for peptides, additionally amino acid analysis or N-terminal sequencing) and purity (HPLC area-percent, ideally greater than 95 percent) on every lot. Vendor certificates of analysis vary in quality; third-party analytical confirmation through independent laboratories (e.g., Janoshik Analytical, Anabolic Lab) is the gold standard for research-grade peptides and small molecules.

For compounds with established pharmaceutical-grade marketing in any jurisdiction, sourcing from the marketed product (where legal and accessible) provides the highest quality assurance.

7. Reconstitution and Handling

Peptides should be reconstituted in bacteriostatic water or sterile water for injection in the volume appropriate to the desired concentration; lyophilized peptides should be allowed to come to room temperature before reconstitution to minimize precipitation. Reconstituted peptides should be stored refrigerated and used within the timeframe specified by the manufacturer (typically 14 to 30 days for bacteriostatic water reconstitutions, shorter for sterile water).

Small molecules: storage conditions vary by compound; consult the certificate of analysis for the specific product. Most are stable at room temperature in dry, dark conditions; oxidation-sensitive compounds (e.g., catecholamine precursors) require cool storage and protection from light.

8. Stack Interaction Considerations

Investigators combining this compound with other research substances should consider receptor-level interactions (additive effects at shared targets), enzyme-level interactions (CYP-mediated drug-drug interactions where applicable), and pharmacodynamic interactions (additive sedation, additive serotonergic activity, additive hemodynamic effects).

The stack interaction section in published monographs of well-characterized compounds is necessarily incomplete for any specific combination; investigators should treat novel combinations with elevated caution and titrate gradually.

9. References

1. Lee SJ, McPherron AC. Regulation of myostatin activity and muscle growth. PNAS 2001.

This monograph is provided for research use only. Not for medical, diagnostic, or therapeutic purposes. Not for human consumption. Compound class generalizations are noted where compound-specific data are sparse; investigators should weight the evidence accordingly.